Core Financial Modeling – Certification Quiz Questions

Modules 4 and 5 – 30-Minute, 60-Minute, and 2-Hour 3-Statement Modeling Case Studies

1. You are building a 3-statement projection model for Monster Beverage Corporation, and you have set up the Balance Sheet projections based on historical trends, as shown below:

Financial Statement Drivers:	Units:	Historical			Projected				
		FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
Balance Sheet:									
Accounts Receivables % Revenue:	%	12.9%	14.5%	16.2%	17.0%	18.0%	19.0%	20.0%	21.0%
Inventory % Cost of Sales:	%	21.4%	17.8%	24.4%	21.2%	21.2%	21.2%	21.2%	21.2%
Prepaid Expenses & Other Assets % OpEx:	%	7.5%	7.3%	8.8%	7.9%	7.9%	7.9%	7.9%	7.9%
Accounts Payable % Cost of Sales:	%	16.3%	15.8%	16.6%	16.2%	16.2%	16.2%	16.2%	16.2%
Accrued Liabilities % OpEx:	%	30.7%	37.4%	39.5%	40.0%	41.0%	42.0%	43.0%	44.0%
Deferred Revenue % Revenue:	%	7.9%	6.7%	5.2%	5.0%	4.7%	4.4%	4.1%	3.8%
Other Long-Term Liabilities % OpEx:	%	2.7%	2.5%	1.8%	2.4%	2.4%	2.4%	2.4%	2.4%

Your co-worker reviews your model and says that you should use different projection methods for some of these line items. He proposes one of the following options instead:

OPTION #1:

Financial Statement Drivers:	Units:	Historical			Projected				
		FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
Balance Sheet:									
Accounts Receivables % Revenue:	%	12.9%	14.5%	16.2%	17.0%	18.0%	19.0%	20.0%	21.0%
Inventory % Cost of Sales:	%	21.4%	17.8%	24.4%	21.2%	21.2%	21.2%	21.2%	21.2%
Prepaid Expenses & Other Assets % Total Expenses:	%	3.0%	2.7%	3.1%	2.9%	2.9%	2.9%	2.9%	2.9%
Accounts Payable % Total Expenses:	%	9.8%	10.0%	10.8%	10.2%	10.2%	10.2%	10.2%	10.2%
Accrued Liabilities % Total Expenses:	%	12.3%	13.8%	13.8%	14.0%	14.3%	14.6%	14.8%	15.0%
Deferred Revenue % Revenue:	%	7.9%	6.7%	5.2%	5.0%	4.7%	4.4%	4.1%	3.8%
Other Long-Term Liabilities % OpEx:	%	2.7%	2.5%	1.8%	2.4%	2.4%	2.4%	2.4%	2.4%

OPTION #2:

Financial Statement Drivers:	Units:	Historical			Projected				
		FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
Balance Sheet:									
Accounts Receivables % Revenue:	%	12.9%	14.5%	16.2%	14.5%	14.5%	14.5%	14.5%	14.5%
Inventory % Cost of Sales:	%	21.4%	17.8%	24.4%	25.0%	26.0%	27.0%	28.0%	29.0%
Prepaid Expenses & Other Assets % Total Expenses:	%	3.0%	2.7%	3.1%	3.1%	3.2%	3.2%	3.3%	3.3%
Accounts Payable % Total Expenses:	%	9.8%	10.0%	10.8%	10.9%	11.0%	11.1%	11.2%	11.3%
Accrued Liabilities % Total Expenses:	%	12.3%	13.8%	13.8%	13.3%	13.3%	13.3%	13.3%	13.3%
Deferred Revenue % Revenue:	%	7.9%	6.7%	5.2%	5.0%	4.7%	4.4%	4.1%	3.8%
Other Long-Term Liabilities % OpEx:	%	2.7%	2.5%	1.8%	2.4%	2.4%	2.4%	2.4%	2.4%

OPTION #3:

Financial Statement Drivers:	Units:	Historical			Projected				
		FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
Balance Sheet:									
Accounts Receivables % Total Expenses:	%	19.3%	22.5%	23.9%	24.5%	25.0%	25.5%	26.0%	26.5%
Inventory % Revenue:	%	8.6%	7.2%	10.7%	8.8%	8.8%	8.8%	8.8%	8.8%
Prepaid Expenses & Other Assets % Total Expenses:	%	3.0%	2.7%	3.1%	3.1%	3.2%	3.2%	3.3%	3.3%
Accounts Payable % Total Expenses:	%	9.8%	10.0%	10.8%	10.9%	11.0%	11.1%	11.2%	11.3%
Accrued Liabilities % Total Expenses:	%	12.3%	13.8%	13.8%	13.3%	13.3%	13.3%	13.3%	13.3%
Deferred Revenue % Net Income:	%	29.9%	22.0%	20.7%	20.0%	19.0%	18.0%	17.0%	16.0%
Other Long-Term Liabilities % Total Expenses:	%	1.1%	0.9%	0.6%	0.5%	0.5%	0.4%	0.4%	0.4%

OPTION #4:

Financial Statement Drivers:	Units:	Historical			Projected				
		FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
Balance Sheet:									
Accounts Receivables % Revenue:	%	12.9%	14.5%	16.2%	16.5%	17.0%	17.5%	18.0%	18.5%
Inventory % Total Expenses:	%	12.9%	11.2%	15.8%	13.3%	13.3%	13.3%	13.3%	13.3%
Prepaid Expenses & Other Assets % Total Expenses:	%	3.0%	2.7%	3.1%	2.9%	2.9%	2.9%	2.9%	2.9%
Accounts Payable % Total Expenses:	%	9.8%	10.0%	10.8%	10.9%	11.0%	11.1%	11.2%	11.3%
Accrued Liabilities % Total Expenses:	%	12.3%	13.8%	13.8%	13.3%	13.3%	13.3%	13.3%	13.3%
Deferred Revenue % Revenue:	%	7.9%	6.7%	5.2%	5.0%	4.5%	4.5%	4.0%	4.0%
Other Long-Term Liabilities % Total Expenses:	%	1.1%	0.9%	0.6%	0.5%	0.5%	0.4%	0.4%	0.4%

Which of these methods is LEAST acceptable?

a. Option #1.

b. Option #2.

c. Option #3.

d. Option #4.

e. We cannot answer this question without also seeing the Change in Working Capital and how it changes with each calculation method.

2. You are building a 3-statement projection model for Stadler Rail, a railway rolling stock manufacturer based in Switzerland. An excerpt of the financial projections showing the company's Revenue, Orders, Backlog, and Employees is shown below:

		Historical:			Projected:				
Financial Statement Drivers:	***Units:***	**FY19**	**FY20**	**FY21**	**FY22**	**FY23**	**FY24**	**FY25**	**FY26**
Income Statement Drivers:									
Beginning Backlog:	*CHF M*	CHF 13,179	CHF 15,026	CHF 16,105	CHF 17,870	CHF 19,806	CHF 21,827	CHF 23,935	CHF 26,130
(+) Order Intake:	*CHF M*	5,117	4,331	5,565	5,723	5,973	6,232	6,486	6,748
(-) Revenue Recognised:	*CHF M*	(3,201)	(3,085)	(3,634)	(3,787)	(3,953)	(4,123)	(4,292)	(4,465)
Ending Backlog:	*CHF M*	**15,026**	**16,105**	**17,870**	**19,806**	**21,827**	**23,935**	**26,130**	**28,413**
Book-to-Bill Ratio:	*x*	1.6 x	1.4 x	1.5 x	1.5 x	1.5 x	1.5 x	1.5 x	1.5 x
Market Size:	*CHF M*	27,000	27,621	28,256	28,906	29,571	30,251	30,886	31,535
Growth Rate:	*%*	4.7%	2.3%	2.3%	2.3%	2.3%	2.3%	2.1%	2.1%
Market Share:	*%*	19.0%	15.7%	19.7%	19.8%	20.2%	20.6%	21.0%	21.4%
Full-Time Employees (FTEs):	*# People*	10,918	12,303	13,067	13,288	13,629	13,745	14,072	14,405
Revenue per FTE:	*CHF / #*	293,186	250,752	278,105	285,000	290,000	300,000	305,000	310,000

Suppose that this company's Book-to-Bill Ratio, currently at 1.5x, decreases to 1.2x in the projected period.

If the annual Order Intake stays the same, would the company's Cash Flow from Operations (CFO) INCREASE or DECREASE?

a. It would INCREASE because the company's Revenue would increase, which means higher Net Income and, therefore, higher CFO.

b. It would DECREASE because manufacturing companies like this one typically have high Working Capital requirements; CFO might decrease due to the need to purchase additional Inventory to support the additional product deliveries.

c. We can't predict how CFO would change with just this information; we would need to examine the Working Capital items related to Revenue and Expenses, such as Accounts Receivable, Accounts Payable, and Inventory.

d. We can't predict how CFO would change with just this information; we would need to examine all the components of Working Capital and their relationship to the Change in Revenue.

3. You have completed a 3-statement model for Coles, a leading grocery retailer based in Australia. Due to IFRS accounting rules, the company considers all its Leases (both Operating and Finance) "Debt" and includes them in its Enterprise Value bridge and in the calculations for key metrics such as the Return on Capital (ROC).

   After building this model, you've run the numbers on a potential minority-stake investment in the company and determined that you might be able to earn a 15% IRR over 5 years, with a multiple of invested capital (MOIC) close to 2.0x. The calculations are shown below:

		Historical:		Projected:				
Key Metrics and Ratios:	***Units:***	**FY20**	**FY21**	**FY22**	**FY23**	**FY24**	**FY25**	**FY26**
Revenue Growth:	*%*	*(1.8%)*	*3.0%*	*3.3%*	*3.3%*	*2.8%*	*2.8%*	*2.8%*
EBITDA:	*$ M*	$ 3,263	$ 3,437	$ 3,640	$ 3,833	$ 3,984	$ 4,141	$ 4,308
Margin:	*%*	*8.6%*	*8.8%*	*9.0%*	*9.2%*	*9.3%*	*9.4%*	*9.5%*
Cash Realisation:	*%*	*101.9%*	*107.4%*	*101.6%*	*103.0%*	*100.9%*	*102.8%*	*102.1%*
Return on Capital (ROC):	*%*		*15.7%*	*17.0%*	*17.9%*	*18.6%*	*19.2%*	*19.7%*
Enterprise Value:	*$ M*	34,696	33,809	36,399	40,243	43,823	47,626	51,695
(-) Debt:	*$ M*	(1,354)	(1,142)	(1,579)	(1,679)	(1,883)	(2,034)	(2,237)
(-) Leases:	*$ M*	(9,083)	(8,756)	(8,475)	(8,223)	(7,994)	(7,789)	(7,609)
(+) Cash:	*$ M*	992	787	813	840	864	888	913
Equity Value:	*$ M*	**25,251**	**24,698**	**27,158**	**31,181**	**34,810**	**38,690**	**42,763**
EBITDA Multiple:	*x*	10.6 x	9.8 x	10.0 x	10.5 x	11.0 x	11.5 x	12.0 x
P / E Multiple:	*x*	25.8 x	24.6 x	23.4 x	24.9 x	26.8 x	28.5 x	30.1 x
(-) Upfront Investment:	*$ M*		(24,698)	-	-	-	-	-
(+) Dividends:	*$ M*			929	1,004	1,041	1,088	1,138
(+) Exit Equity Value:	*$ M*			-	-	-	-	42,763
Net Cash Flows:	*$ M*		**(24,698)**	**929**	**1,004**	**1,041**	**1,088**	**43,900**
IRR:	*%*		**15.0%**					
Multiple of Invested Capital (MOIC):	*x*		**1.9 x**					

Which of the following represent(s) valid reason(s) to be SKEPTICAL of these results for the IRR and MOIC?

a. The company's Lease Liabilities keep decreasing over time, even though its Revenue, EBITDA, Debt, and Cash are all growing.

b. The company's EBITDA multiple expands from ~10x to 12x in Year 5, even though its Revenue Growth is almost the same and its EBITDA Margin improves only slightly; the ~4% increase in ROC may not be enough to justify this multiple expansion.

c. The Dividends keep increasing over time, and they contribute more than 3% to the IRR figure, which is too much for an investment in a mature/stable company like this one.

d. The Cash Realization stays in about the same range throughout the holding period, which indicates that the company is not becoming more efficient in converting its EBITDA into Cash Flow from Operations.

e. All of the above.

f. Answer choices A and B.

g. Answer choices A, B, and C.

h. Answer choices B, C, and D.